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Wall Cabinet in Cherry

A project plan for
a cabinet that has
attractive dovetails
and door joinery



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Wall Cabinet in Cherry



Power tools deliver easy, attractive dovetails and door joinery

BY MATTHEW TEAGUE

Most every home has a narrow wall—usually at the end of a hallway or beside an entry door—where nothing seems to fit. This piece was designed for such a space. I keep tall vases in the cabinet and candles in the lower drawer, but it can be adapted easily to all sorts of needs. Add a few drawers, and you have a good spot for sewing supplies. With more shelves, this piece makes a handsome spice cabinet; the lower drawer is perfect for storing teas or loose spices.

Instead of using elaborate moldings, raised panels, or an arched door, this cabinet design highlights the basic joinery that is the standard in quality woodworking. Traditional dovetail joinery holds the case together, while sliding dovetails lock the shelves into place. The door is a simple frame-and-panel assembly, but I chose bridle joints instead of traditional mortises and tenons because the exposed joinery complements the through-dovetails on the case. Instead of cutting a raised or fielded panel, I opted for the clean look of a flat panel.

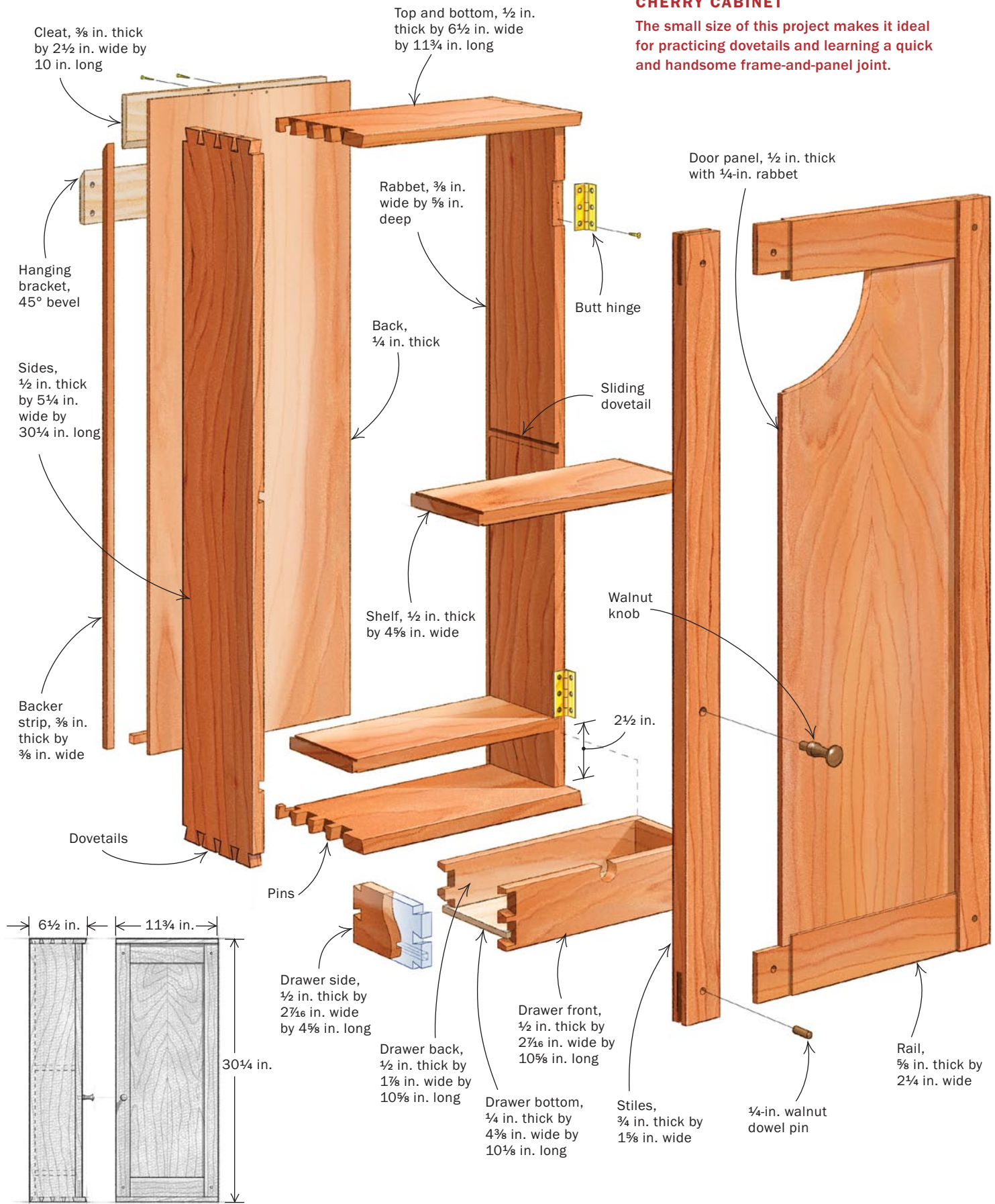
An efficient method for dovetailing the carcass

I cut the dovetails with a combination of traditional methods and power tools. The tails are cut first, using a 1/2-in. by 14° dovetail bit and a shopmade sled that is run against a fence on the router table. The first and last pins should be inset about 3/8 in. from the ends, with the other three pins spaced evenly between them.

Using this cutting method, you need only mark the centerline of the cuts (see photo, p. 46) and set the router bit to the exact height of the mating stock. This

CHERRY CABINET

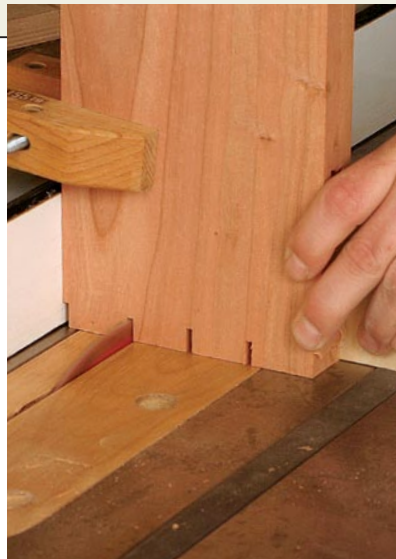
The small size of this project makes it ideal for practicing dovetails and learning a quick and handsome frame-and-panel joint.



Router techniques speed dovetailing

CUT THE TAILS FIRST

After laying out the centerlines, remove some of the waste on the tablesaw and then use a router table setup to form the tails.



Lay out the tail centerlines. A single line is all that's needed to mark the tail centerlines (left). On the tablesaw, use the miter gauge with a tall auxiliary fence to make a sawcut at each centerline (right).

is a lot of material for the router bit to remove in one pass, so I remove a little at the tablesaw first. Holding the stock upright against the miter gauge or cross-cut sled, I take a single pass split on each centerline at the tablesaw. The rest of the stock is cut with a single pass through the router bit. Be sure that you clamp the stock to the sled before routing, but don't worry if the tail spacing is slightly irregular; any irregularities in the work will actually do a better job of mimicking traditional hand-cut joinery.

To start cutting pins, use a marking gauge set to the thickness of the sides and mark both ends of the top and bottom to establish the baseline of the dovetails. Clamp the pin stock in the vise, align the ends squarely, and use a marking knife to mark out the pins from the tails (see photo, facing page). Then trace all the cut lines with a pencil so that they will be easier to see when cutting. Saw the pins by hand, then clean up the excess stock with a router set to cut as deep as the top and bottom are thick.

To rout out the bulk of the waste and establish a baseline for the tails, use a simple right-angle jig or large backer block clamped to the end of the stock; the block is used to help register the base of the router as you remove the waste (see photo, facing page).

Once the pins are cut, you'll probably need to trim a little here and there. It's best to trim the pins instead of the tails, which have a tendency to split as you pare them to size. Once trimming is complete, the pins and



Cut the dovetails on the ends of the case sides. Using the router table equipped with a dovetail bit, and a sled to support the stock, the dovetails are cut in short order.

tails should fit together with firm hand pressure or a few light mallet taps.

If you've got the hinges in hand, go ahead and mortise the sides of the case to accept the hinges. You could do this later by hand, but it's easier to do now with a router.

Sliding dovetails secure the shelves

At this point, you're ready to cut the sliding dovetails that hold the shelves. Again, start by marking out the centerlines of the shelf locations on the case sides. It's a good idea to remove a little of the stock at the tablesaw before routing.

Cut the dovetail grooves first, then assemble the case—Because this is such a small cabinet, I cut the dovetail grooves on the router table. Use the same bit you used to dovetail the carcass. Position the bit in the router table so that about 1/4 in. is exposed, and use a square backer board. The pusher board not only holds the case sides square to the fence, it prevents

USE THE TAILS TO MARK THE PINS

Saw right to the lines and use a router freehand to remove almost all the waste. A bit of chisel work finishes the job.



Mark for the pins. Use a marking knife to scribe the pin lines on the ends of the top and bottom.



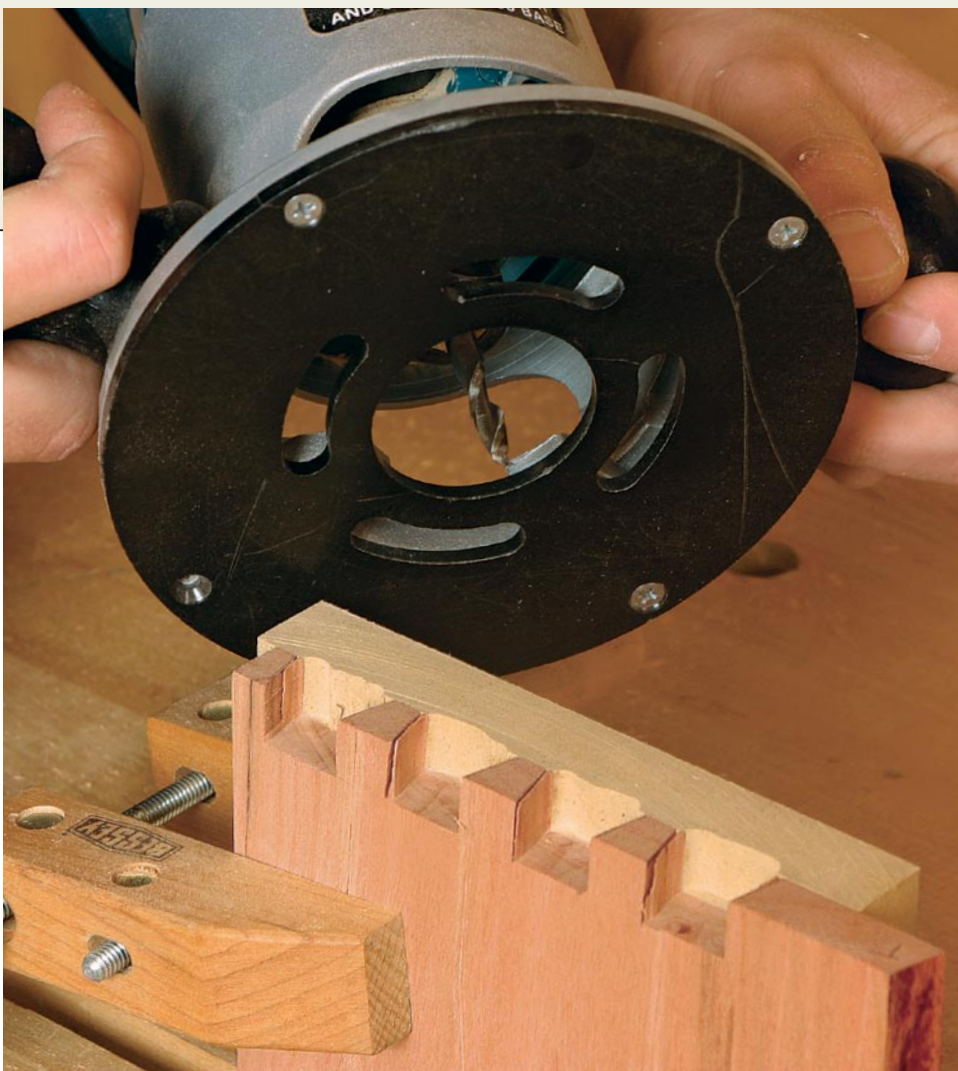
Hand saw the pin lines. With the knife lines as a reference, use a dovetail saw to cut along each pin line.

tearout as you rout the tails (see photo, p. 48). Once the dovetail grooves are cut on the case sides, you can assemble the case. Be sure to glue it on a flat surface. After the clamps go on, double-check to make sure the assembly is square.

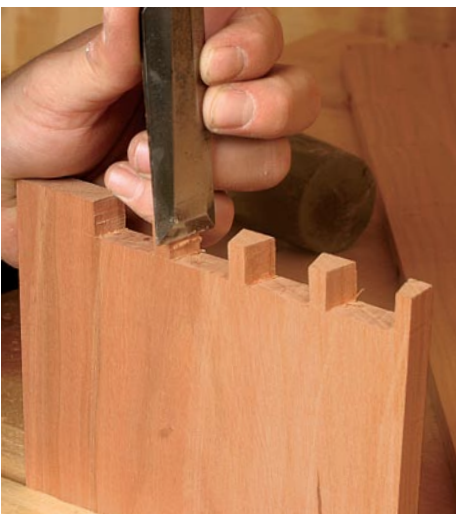
Cut the shelves to length and rout the dovetails on each end—With the case assembled, mark the shelf length directly from the case. Measure for a snug fit. Use the router table to cut the tail on each end of each shelf. There's no need to change the height setting from the dovetail-groove cut made earlier in the case sides.

Adjust the router fence so that only a small edge of the bit is exposed. Rout the tails on the ends by taking a pass on each face using the same jig you used to rout the dovetails on the case. Use a piece of test stock and adjust the fence in small increments to sneak up on a good fit.

When you're satisfied with the fit, rout each side of the two shelves and slide the shelves into place. A



Rout away the waste. After clamping a backer block flush with the top edge of the top or bottom piece, use the router and a straight bit to cut close to the dovetail-saw cut lines.



Trim the excess. After routing, a thin web of wood sometimes remains in the pin. Use a chisel to remove the web and shave away excess stock as needed.



Test the fit. Good-fitting dovetail joints should go together with only moderate hand pressure or a little persuasion from a mallet.

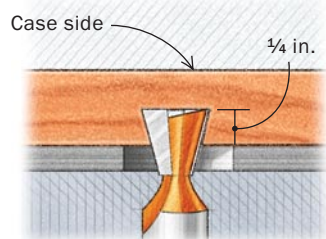
Sliding dovetails are easy on a router table

The router table and a single dovetail bit are used to cut the dovetail grooves in the sides and the dovetail on each end of the shelves.

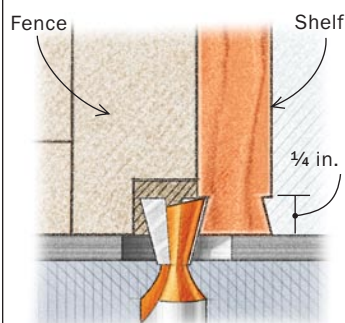


NO NEED TO CHANGE THE BIT HEIGHT

The router-bit height is the same no matter if you are cutting the dovetail groove in a side or the dovetail on the ends of a shelf.



ROUTING THE CASE



ROUTING THE SHELVES

Create the groove. Cut the dovetail groove with the case side flat on the table. Use a pusher board to feed the workpiece and keep it square to the fence (above). Position the shelves vertically against the fence to cut the tails (below).



Add the shelves. After the case is glued and clamped, the shelves are slid into the grooves (right). For easier assembly, Teague applies glue to the back half of the grooves and the front half of the dovetails.

drop of glue at the front and back of each shelf—applied as the shelf slides into the dovetail grooves—is all you need.

Rabbet the case to accept the back

After the case is glued up, I use a rabbeting bit on the router table to cut a $\frac{3}{8}$ -in.-wide by $\frac{5}{8}$ -in.-deep rabbet around the back of the case. To minimize the chance of splintering, stop the cut just short of each corner, then complete the rabbet with a bench chisel. Also, it's best to take about three light passes instead of trying to hog off all the stock in one pass.

The back is nothing more than a $\frac{1}{4}$ -in.-thick panel glued and brad-nailed to the center of the top, bottom, and shelves. The back must be free to expand and contract with changes in humidity, so limit the glue to an area about 2 in. wide. Small strips of $\frac{3}{8}$ -in.-square stock are glued to the sides of the rabbets on the back of the case to secure the panel.

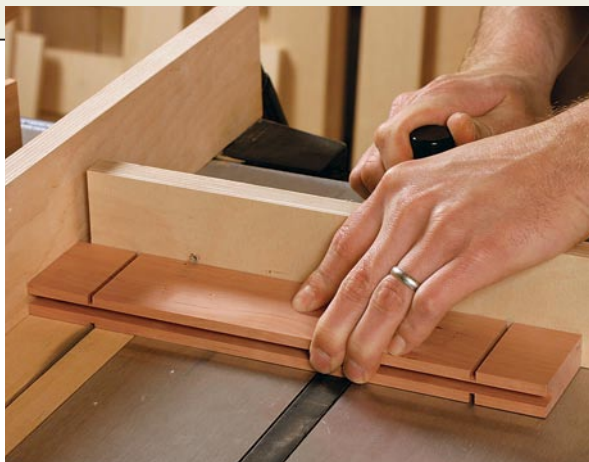
Mount case to wall with cleats—I used a simple two-piece cleat to hang the cabinet (see drawing, p. 45). When the cabinet is hung, the pieces interlock for a tight fit against the wall.

Attach one piece to the cabinet so that it butts against the underside of the case top. Use a couple of screws



Quick door frames on the tablesaw

With each stile and rail connected by a unique version of the mortise-and-tenon called a bridle joint, the door frame enjoys plenty of strength and good looks.



Cut the tenon shoulders on the rails. After grooving the frame members and mortising the stiles, use the tablesaw to establish the tenon length on each rail.

spaced about 2½ in. apart and drive them into the back edge of the cabinet top. Apply a coat of glue between the screws.

Shadowlines make a simple door interesting

To build the door, the frame is grooved first at the tablesaw, and then the joinery is cut on the tablesaw using a tenoning jig. The jig can be either aftermarket or shopmade. I cut the open mortises on the stiles first, then cut the rail tenons to fit.

When the joinery has been cut, plane down the front face of the rails an extra ¼ in. so that they will be slightly inset on the stiles.

The simple flat panel for the door is cut from ½-in.-thick stock, then rabbeted to fit into the frame. Start by gluing the center of the panel to the center of both rails. Add a few drops of glue to the mortises, then slide the stiles into place on the rails and panel.

Once the door is together, pegging the joints will strengthen the assembly and help frame the cabinet visually. For contrast, I used ¼-in. walnut dowel pins. To add the pegs, simply drill a ¼-in.-dia. hole just shy of the door thickness, then tap a length of dowel into the hole. The excess can be sawn off and then chiseled flush to the front of the door.

After assembling the door, test the fit against the case. If the assembly went together square, you should have a perfect fit. If necessary, trim it for a tight fit on the case using either a plane or the tablesaw. Since you've already mortised the case for the hinges, all that's left is to cut the mating hinge mortises in the door. I use a router to cut mortises, but a chisel works as well.



Cut the tenon cheeks. With a tenoning jig supporting the rails on end, cut each tenon cheek. The jig also is used to cut mortises on each end of the stiles to accept the tenons.



A dowel pin adds an interesting detail and a little extra strength. Drill a ¼-in.-dia. by ⅝-in.-deep hole in the front face of the door, centered on the bridle joint, then glue a dowel pin into the hole.

Adding a drawer

The lower drawer inside is joined using through-dovetails at both the front and back. You can use the same dovetailing method you used for the case.

I drilled an off-center ⅞-in.-dia. hole into the drawer face to serve as a finger pull. The hard edges on the finger pull are softened with a knife, and the whittled surfaces are a nice surprise when someone opens the drawer for the first time. Without fail, they pull out the drawer and take a closer look. That closer look is as near to a trophy as a woodworker gets. □

Matthew Teague lives in Nashville, Tenn., where he builds furniture and writes about woodworking.